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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FULLER, ROBERT EDWARD	
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3676	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,236	HOCQUET ET AL.	
	Examiner	Art Unit	
	ROBERT E. FULLER	3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14-17,19 and 21-23* is/are pending in the application.

4a) Of the above claim(s) *6-8 and 12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,9-11,14-17,19 and 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 June 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's submission, filed September 30, 2008, has been carefully considered. The claim objections and drawing objections set forth in the previous Office Action have been withdrawn. However, examiner has added new drawing and claim objections, as well as rejections under 35 U.S.C. 112. Examiner maintains the prior art rejections set forth in the previous Office Action. This Office Action has not been made final.

Claims 1-12, 14-17, 19, and 21-23 remain pending, claims 6-8 and 12 are withdrawn.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the turbine and braking device being immersed in different fluid media must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 6-8 and 12 are objected to because of the following informalities: The status identifiers of these claims are improper. They should be listed as "Withdrawn-Currently Amended," or "Currently Amended-Withdrawn." Appropriate correction is required.

4. Claim 22 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 22 is dependent off of claim 1, which already recites "drilling equipment."

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 21 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 21 recites that the turbine and the brake are immersed in different fluids. However, none of Figures 1-3 show how the turbine and the brake could be immersed in different fluids. No separate fluid chambers or anything of that sort are shown in the drawings. The drawings must be amended in order for these claims to be considered enabled.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-12, 14-17, 19, and 21-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 23 recite the limitation that movement of the braking device generates "a resisting torque (T) that is a function of the square of the rotation speed (omega.sub.t.) of the turbine shaft (4) with respect to the fluid medium." As best understood by the examiner, this does not seem to accurately express the relationship expressed in line 27 of page 4 of the Specification. Examiner suggests the following change:

> ...generating a resisting torque (T) that is a function of the square of the difference between the rotation speed (omega.sub.t.) of the turbine shaft (4) ~~with respect to~~ and the rotation speed (omega.sub.f.) of the fluid medium.

Also, as a general matter, the scope of these claims is unclear because of the construction of claim 1, which leads to a great deal of confusion with respect to claims 21 and 22. This was discussed in paragraph 10 of the Office Action of April 30, 2008. The preamble of claim 1 recites "a hydraulic braking device," however, claim 1 is actually directed to the combination of a turbine and a braking device, and this combination is intended to be used with drilling equipment. The way claim 1 is written makes it very difficult to decipher which components are actually required by the claim. The amendments made to claim 1 in the most recent response do not do enough to rectify the problem. Also, the language "a drilling equipment," while not necessarily incorrect, is not typical. Examiner suggests the following language:

1. A device configured to operate with a drilling apparatus, comprising:

a turbine being provided with a turbine shaft, and;

a hydraulic braking device comprising at least one body connected to the turbine shaft;

wherein the hydraulic braking device is immersed..., etc.

or,

1. A drilling apparatus, comprising:

a turbine being provided with a turbine shaft, and;

a hydraulic braking device comprising at least one body connected to the turbine shaft;

Wherein the hydraulic braking device is immersed..., etc.

With regard to claim 21, this claim recites "the turbine according to claim 1," but claim 1 refers to a hydraulic braking device. This confusion is largely caused by the deficiencies in claim 1 discussed above. Claim 21 must be consistent with claim 1.

Claim 22 also does not make sense since claim 21 is not directed to a turbine. Examiner believes that claim 22 made more sense as originally constructed, with minor modifications, as follows:

> 22. A drilling equipment, comprising [[the]] a turbine (2) equipped with the hydraulic braking device (10) according to claim 21.

Note: depending on how claim 1 is amended, the above suggestion may be rendered moot.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-5, 9-11, 14-17, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ioanesian et al. (US 3,728,040).

With regard to claim 1, Ioanesian discloses a hydraulic braking device (15) for a turbine (1) in a drilling equipment, said turbine being provided with a turbine shaft (7), wherein the hydraulic braking device comprises at least one body (11, 13) connected to

said turbine shaft, and wherein when said hydraulic braking device is immersed in a fluid medium, rotation of the turbine shaft about its axis causes a movement of the said at least one body with respect to the said fluid medium, this movement generating a resisting torque that is a function of the square of the rotation speed of the turbine shaft with respect to the said fluid medium.

With regard to claims 2-5, Ioanesian discloses a braking shaft (the lower half of shaft 7) coupled to the said turbine shaft (the upper half of shaft 7), wherein the body is connected to the braking shaft. The shafts are coaxial, they rotate together and are combined into a single shaft.

With regard to claim 9, the body rotates when the turbine shaft rotates.

With regard to claims 10 and 11, the body is connected to the shaft via a connecting means comprising an anchor zone.

With regard to claims 14-17, the bodies are spaced in a regular manner, have the same axial positions, are identical, and have the same dimensions.

With regard to claim 21, in Ioanesian, the braking device and the turbine could be considered to be in different fluids, because the fluid is not static. At any given time, the fluid that is in contact with the brake could have a slightly different composition or temperature than the fluid that is in contact with the turbine.

With regard to claim 22, Ioanesian's turbine is for drilling applications.

With regard to claim 23, Ioanesian discloses a turbine (1) comprising: a turbine shaft (7) and; a hydraulic braking device (15) comprising at least one body (11, 13) connected to said turbine shaft (4); wherein when said hydraulic braking device is immersed in a fluid medium, rotation of the turbine shaft about its axis causes a movement of the said at least one body with respect to the said fluid medium, this movement generating a resisting torque that is a function of the square of the rotation speed of the turbine shaft with respect to the said fluid medium.

11. Claims 1 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Braun (US 3,547,231).

With regard to claims 1, 22, and 23, Braun discloses a turbine (17) comprising: a turbine shaft (49) and; a hydraulic braking device (10) comprising at least one body (66) connected to said turbine shaft (23); wherein when said hydraulic braking device is immersed in a fluid medium, rotation of the turbine shaft about its axis causes a movement of the said at least one body with respect to the said fluid medium, this movement generating a resisting torque that is a function of the square of the rotation speed of the turbine shaft with respect to the said fluid medium. Though Braun does not explicitly state that the turbine is used in equipment for drilling a subterranean well, Brown does state that the turbine could be used in a truck. Trucks are often used in support of drilling operations. In fact, trucks are known to carry mobile coiled tubing drilling rigs (see US 5,271,461 to Decker et al.); therefore they can be considered drilling equipment.

With regard to claim 21, the turbine and braking device are immersed in different fluids.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ioanesian et al.

Ioanesian discloses the braking device being upstream of the turbine, rather than downstream. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have arranged to have modified Ioanesian so that the braking device was downstream of the turbine, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse,* 86 USPQ 70.

Response to Arguments

14. Applicant's arguments filed September 30, 2008 have been fully considered but they are not persuasive.

Applicant has argued that neither Ioanesian nor Braun discloses a braking device which generates a resisting torque that is a function of the square of the rotation speed of the turbine with respect to the fluid. Examiner respectfully traverses applicant's argument. Ioanesian and Braun both disclose all of the structural elements required by the apparatus claims. Though both references may not explicitly state that the braking devices generate the type of resisting torque functionally claimed in claims 1 and 23, Applicant has provided no evidence as to why they would not produce this type of torque. As the references disclose all of the structure, examiner can only conclude that they operate the same way. Applicant points to Figures 9-11 of Ioanesian as evidence of a linear relationship between torque and the square of the difference in rotation speed between the turbine shaft and the fluid. Examiner points out that none of these graphs shown in Ioanesian relate resisting torque to the square of a difference in rotation speed. Instead, these graphs compare various dimensionless ratios such as "braking torque/operational torque" and "idle rpm/operational rpm" (see column 3 line 58-column 4, line 13). Therefore, examiner is not convinced that these graphs are clear evidence of a linear relationship between braking torque and the square of a difference in rotation speed. Applicant must show mathematically why these graphs prove a linear relationship.

Applicant has further argued that Braun does not disclose drilling equipment. Examiner notes that claims which specify drilling equipment are now also rejected using the Ioanesian reference, which clearly is for drilling equipment. Examiner traverses applicant's argument with respect to Braun, however. Claim 22 contains the phrase "a drilling equipment" in the *preamble* of the claim. The only structure in this so-called drilling equipment is a turbine and a hydraulic braking device. The claim does not require any structure that is actually capable of drilling, such as a drill bit. Braun provides all of the claimed structure. Therefore, Braun merely needs to be capable of being used in conjunction with drilling equipment. As mentioned above, the turbine of Braun is used with an engine (11) which could be used in a truck carrying coiled tubing or other drilling equipment, or could even be used to power a rotary table on a drilling rig. Since the phrase "drilling equipment" is in the preamble of the claim, and Braun contains all of the structure claimed in claim 22, i.e. a turbine and a braking device, then Braun certainly teaches all of the limitations of claim 22 since Braun's turbine is capable of being used with drilling equipment.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT E. FULLER whose telephone number is (571)272-0419. The examiner can normally be reached on Monday thru Friday from 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shane Bomar/
Primary Examiner, Art Unit 3676

12/14/2008
REF